

RDID 0030 US  
09/704,235

Clean Version of Replacement Claims for Entry During  
Prosecution of US Application No. 09/704,235

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1. A biosensor comprising:  
a substrate,  
a reagent positioned on the substrate, and  
a cover including a top side and a generally flat bottom side, the bottom side being coupled to the substrate to define a sealed portion and an unsealed portion, at least a portion of the unsealed portion of the generally flat bottom side lying upon the reagent and cooperating with the substrate to define a channel extending across the reagent.
  2. The biosensor of claim 1, wherein the cover includes an opening and the channel extends between the opening and the reagent.
  3. The biosensor of claim 2, wherein the cover includes opposite ends and the channel extends between the opening and one of the ends.
  4. The biosensor of claim 2, wherein the cover includes a second opening and the channel extends between the first and second openings.
  5. The biosensor of claim 4, wherein the cover includes opposite edges and one opening is formed in each of the opposite edges.
  6. The biosensor of claim 5, wherein each opening is defined by a disrupted concave surface.
  7. The biosensor of claim 2, wherein the cover includes a second opening that is aligned with the reagent.
  8. The biosensor of claim 7, wherein the channel converges from the first opening toward the second opening.
  9. The biosensor of claim 1, further comprising electrodes positioned on the substrate and the channel extends across at least a portion of the electrodes.
  10. The biosensor of claim 9, wherein the cover includes an opening to the channel that is spaced-apart from the electrodes.
  11. The biosensor of claim 1, wherein the channel has a height that is less than 10  $\mu\text{m}$ .
  12. The biosensor of claim 1, further comprising an adhesive positioned between the cover and the substrate.

RDID 0030 US  
09/704,235

13. A biosensor comprising:  
a substrate,  
a reagent positioned on the substrate, and  
a cover having a top side and a generally flat bottom side, and an opening extending between the top and bottom sides, the bottom side being coupled to the substrate to define a sealed portion and an unsealed portion,  
at least a portion of the unsealed portion of the generally flat bottom side lying upon the reagent and cooperating with the substrate to define a channel extending between the opening and the reagent.

14. The biosensor of claim 13, wherein the sealed portion has an interior border that is generally U-shaped.

15. The biosensor of claim 14, further comprising electrodes positioned on the substrate and at least a portion of the electrodes are positioned in the channel.

15. The biosensor of claim 13, wherein the sealed portion has an interior border that converges from the opening toward the reagent.

16. The biosensor of claim 13, wherein the cover includes two openings and the channel extends between the openings.

17. The biosensor of claim 16, wherein the cover includes opposite edges and the openings intersect the edges respectively.

18. The biosensor of claim 16, wherein the substrate includes notches that are aligned with the openings in the cover.

19. The biosensor of claim 16, wherein the sealed portion has an interior border that converges from the first opening toward the second opening.

20. A method of forming a biosensor having a capillary channel, the method comprising the steps of:

providing a substrate,  
positioning a reagent on the substrate,  
providing a cover having a top surface and a bottom surface,  
placing a thermoset adhesive on the bottom surface of the cover,  
placing the adhesive-coated bottom surface on the substrate so that at least a portion of the thermoset adhesive is positioned on the reagent, and

RDID 0030 US  
09/704,235

Sub  
BI> heating portions of the thermoset adhesive to couple the bottom side to the  
substrate to define a sealed portion and an unsealed portion, the unsealed portion  
cooperating with the substrate to define a capillary channel extending across the reagent.

21. The method of claim 20, further comprising the step of placing electrodes  
on the substrate.

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